



EOSDIS

NASA'S EARTH OBSERVING SYSTEM
DATA AND INFORMATION SYSTEM

Earthdata Search: The Relevance of Relevance

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EED Program



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SESIP-0716-PQ

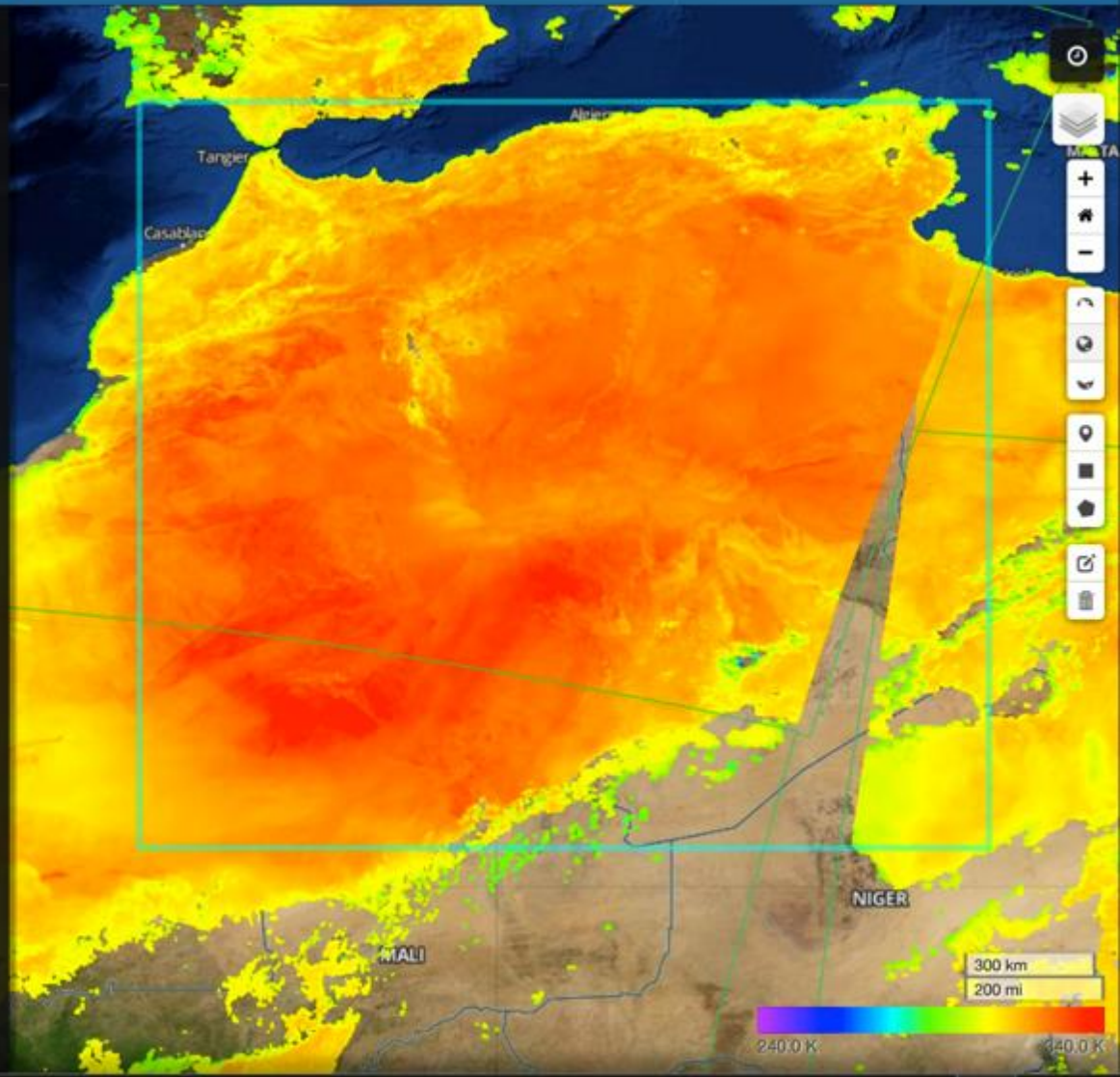
[Back to Collections](#)

MODIS/Terra Near Real Time (NRT) Land Surface Temperature/Emissivity 5-Min L2 Swath 1km

[Retrieve Collection Data](#)
[i](#)
[✎](#)
[+](#)

Showing 4 of 4 matching granules for the selected day. (Show All)
 Sort by: [Sort Date: Newest first](#)
 Search Time: 0.2s [Report a metadata problem](#)

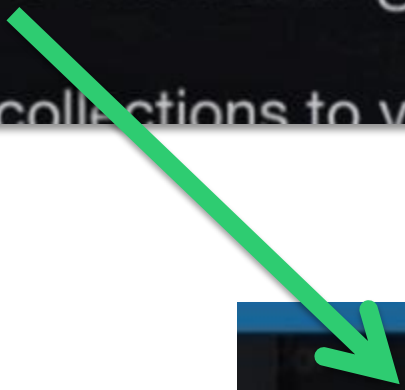
- MOD11_L2.A2016162.1100.006.2016162120416.NRT.hdf**
 2016-06-10T11:00:00Z to 2016-06-10T11:05:00Z
[i](#) [↓](#)
- MOD11_L2.A2016162.1055.006.2016162120412.NRT.hdf**
 2016-06-10T10:55:00Z to 2016-06-10T11:00:00Z
[i](#) [↓](#)
- MOD11_L2.A2016162.0920.006.2016162103246.NRT.hdf**
 2016-06-10T09:20:00Z to 2016-06-10T09:25:00Z
[i](#) [↓](#)
- MOD11_L2.A2016162.0915.006.2016162102959.NRT.hdf**
 2016-06-10T09:15:00Z to 2016-06-10T09:20:00Z
[i](#) [↓](#)



Late 2015: Our catalog grew

7053 Matching Collections

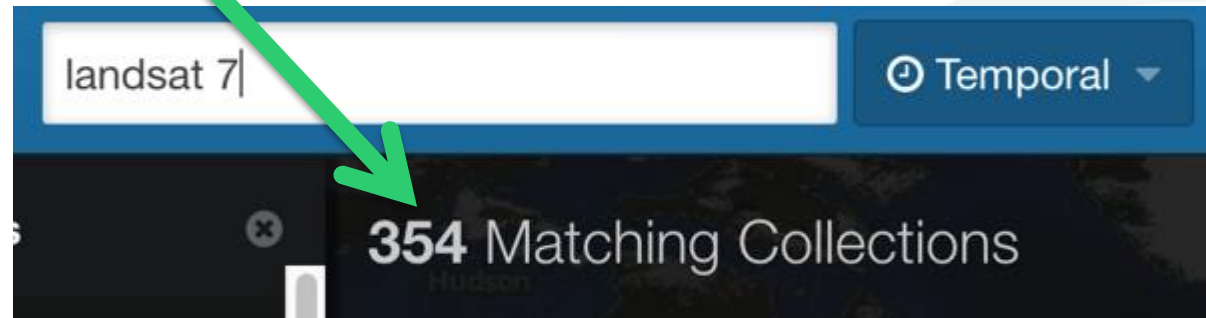
Add collections to your project to compare



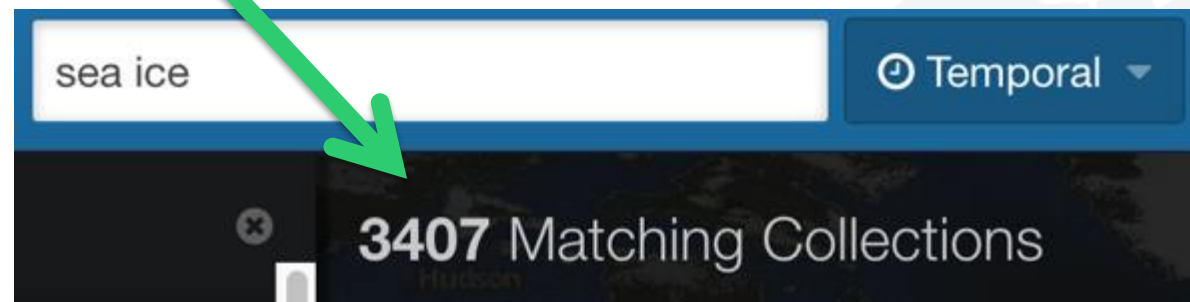
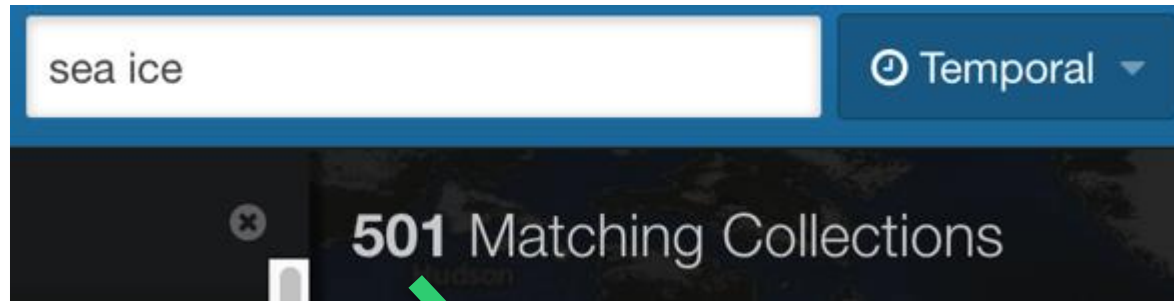
32960 Matching Collections

Add collections to your project to compare

... as did our relevancy needs



... as did our relevancy needs



Users echoed the need for better relevance

Our Method

Initial Questionnaire



Survey

Before the complete familiarity

Collections

Search Relevance

Clear-cut, highly-specific searches do not turn up what users need as the top result. Less specific searches fare worse.

Finding



If users can't find the collections
they need,
none of our other work matters

Earthdata Search

METADATA AND DISCOVERABILITY

Metadata isn't always consistent (Nor should we require it to be)

Processing level	
1	204
1A	24
1B	219
1T	10
L1T	6
Level 1	7
NA	2
Organization	

Platform	
AM-1	48
TERRA	1
Instrument	

SOLID EARTH	176
SPECTRAL ENGINEERING	2
SPECTRAL/ENGINEERING	548
SUN-EARTH INTERACTIONS	22

Sometimes it is
too consistent



No image
available

AfSIS MODIS Collection: Albedo

CIESIN_AfSIS_MODIS_ALB2012 v2012.00 - C

2000-02-01 to 2012-06-30 | Collection on



No image
available

AfSIS MODIS Collection: Land

CIESIN_AfSIS_MODIS_LCT2012 v2012.00 - C

2001-01-01 to 2009-12-31 | Collection on



No image
available

AfSIS MODIS Collection: Leaf Area

CIESIN_AfSIS_MODIS_LAIFPAR2012 v2012.0

2000-02-01 to 2012-06-30 | Collection on



No image
available

AfSIS MODIS Collection: Land Surface Temperature Release

CIESIN_AfSIS_MODIS_LST201404 v2014.04

2002-07-01 to 2014-03-31 | Collection on



No image
available

AfSIS MODIS Collection: Primary Production

CIESIN_AfSIS_MODIS_PP2012 v2014.00 - C

2000-01-01 to 2010-12-31 | Collection on



No image
available

AfSIS MODIS Collection: Vegetation Indices

CIESIN_AfSIS_MODIS_VEGIN201404 v2014.0

2000-02-01 to 2014-03-31 | Collection on

Sometimes it's incomplete or contains errors

BIOMASS	1
BIOOSPHERE	2
BIOSPHERE	839

MODIS/Terra Snow Cover 5-Min L2 500m V005 NRT

Information	Metadata
<p>Download Page:</p> <p>Description:</p> <p>Level 2 Snow Cover 5-Min L2 500m...</p> <p>Archive Center:</p> <p>LAADS</p> <p>Processing Center:</p> <p>MODAPS</p>	

Sometimes it is too complete



Spatial Coordinates:
Bounding Rectangle: (-50°, -180°, -70°, 180°)
Bounding Rectangle: (85°, -10°, 70°, 35°)
Temporal Extent:
2004-10-01 to 2007-03-31

Metadata Formats:
Native | ATOM | ECHO10 | ISO19115 | DIF | ODD

API Endpoints:

Metadata record for data from ASAC Project 2584
See the link below for public details on this project.

The Southern Ocean plays a significant role in the biogeochemical cycling of sulphur due to high spring-summer fluxes of dimethylsulphide (DMS), particularly south of 60 degrees S. Recent DMS flux perturbation simulations have recently highlighted the key role of the SO between 50-70 degrees S in the DMS-climate feedback hypothesis [Gabric et al., 2003; Gabric et al., 2004]. This project examines the interactions and feedback between marine polar plankton and global climate through the use of biogeochemical and global climate models, and explores the sensitivity of climate to the current and future biogenic production of dimethylsulphide at polar latitudes.

This was a modelling project, and as such did not collect any data of its own.

Taken from the abstracts of the referenced papers:

The global climate is intimately connected to changes in the polar oceans. The variability of sea ice coverage affects deep-water formations and large-scale thermohaline circulation patterns. The polar radiative budget is sensitive to sea-ice loss and consequent surface albedo changes. Aerosols and polar cloud microphysics are crucial players in the radioactive energy balance of the Arctic Ocean. The main biogenic source of sulfate aerosols to the atmosphere above remote seas is dimethylsulphide (DMS).

Recent research suggests the flux of DMS to the Arctic atmosphere may change markedly under global warming. This paper describes climate data and DMS production (based on the five years from 1998 to 2002) in the region of the Barents Sea (30-35 degrees E and 70-80 degrees N). A DMS model is introduced together with an updated calibration method. A genetic algorithm is used to calibrate the chlorophyll-a (CHL) measurements (based on satellite SeaWiFS data) and DMS content (determined from cruise data collected in the Arctic). Significant interannual variation of the CHL amount leads to significant interannual variability in the observed and modelled production of DMS in the study region. Strong DMS production in 1998 could have been caused by a large amount of ice algae being released in the southern region.

Forcings from a general circulation model (CSIRO Mk3) were applied to the calibrated DMS model to predict the zonal mean sea-to-air flux of DMS for contemporary and enhanced greenhouse conditions at 70-80 degrees N. It was found that significantly decreasing ice coverage, increasing sea surface temperature and decreasing mixed-layer depth could lead to annual DMS flux increases of more than 100% by the time of equivalent CO2 tripling (the year 2080). This significant perturbation in the aerosol climate could have a large impact on the regional Arctic heat budget and consequences for global warming.

The response of oceanic phytoplankton to climate forcing in the Arctic Ocean has attracted increasing attention due to its special geographical position and potential susceptibility to global warming. Here, we examine the relationship between satellite derived (sea-viewing wide field-of-view sensor, SeaWiFS) surface chlorophyll-a (CHL) distribution and climatic conditions in the Barents Sea (30-35 degrees E, 70-80 degrees N) for the period 1998-2002. We separately examined the regions north and south of the Polar Front (~76 degrees N). Although field data are rather limited, the satellite CHL distribution was generally consistent with cruise observations. The temporal and spatial distribution of CHL was strongly influenced by the light regime, mixed layer depth, wind speed and ice cover. Maximum CHL values were found in the marginal sea-ice zone (72-73 degrees N) and not in the ice-free region further south (70-71 degrees N). This indicates that melt-water is an important contributor to higher CHL production. The vernal phytoplankton bloom generally started in late March, reaching its peak in late April.

A second, smaller CHL peak occurred regularly in late summer (September). Of the 5 years, 2002 had the highest CHL production in the southern region, likely due to earlier ice melting and stronger solar irradiance in spring and summer.

Arctic ecosystems and global climate are closely related. This paper studies the distributions and the coupling relationship between Chlorophyll a (Chl a) and aerosol optical thickness (AOT) in Greenland Sea (10 degrees W - 10 degrees E, 70 degrees N - 85 degrees N) during

Facet relevancy matters, too

GROUND STATIONS	1120
GROUND-BASED OBSERVATIONS	1269
LABORATORY	708
LANDSAT	277
LANDSAT-5	206
LANDSAT-7	184
MAPS	352
METEOROLOGICAL STATION	106

Providing relevant refinement options and meaningful distinctions between results is as important as result order

Earthdata Search

HOW DO WE IMPROVE RELEVANCY?

Immediate easy wins




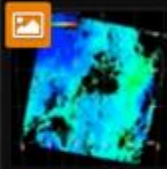


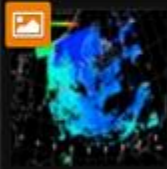





Sort order: Newer versions first

Version 6 Near-Realtime

Version 6

Version 5.1

Version 5 Near-Realtime

 No image available	MODIS/Terra Near Real Time (NRT) Total Precipitable Water Vapor 5-Min L2 Swath 1km and 5km MOD05_L2 v6NRT - NASA/GSFC/EOS/ESDIS/LANCEMODIS 2015-12-06 ongoing 2873 Granules	 
	MODIS/Terra Total Precipitable Water Vapor 5-Min L2 Swath 1km and 5km V006 MOD05_L2 v6 - NASA/GSFC/SED/ESD/HBSL/BISB/LAADS 1999-12-18 ongoing 1682654 Granules	 
	MODIS/Terra Total Precipitable Water Vapor 5-Min L2 Swath 1km and 5km V5.1 MOD05_L2 v5.1 - NASA/GSFC/SED/ESD/HBSL/BISB/LAADS 1999-12-18 ongoing 1680564 Granules	 
 No image available	MODIS/Terra Near Real Time (NRT) Total Precipitable Water Vapor 5-Min L2 Swath 1km and 5km (Collection 005) MOD05_L2 v5NRT - NASA/GSFC/EOS/ESDIS/LANCEMODIS 1999-12-18 ongoing 2873 Granules	 













Sort order: Collections with granules first

2,862 Granules

1,459,806 Granules

Collection only

Collection only

 No image available	MODIS/Aqua Near Real Time (NRT) Total Precipitable Water Vapor 5-Min L2 Swath 1km and 5km (Collection 005) MYD05_L2 v5NRT - NASA/GSFC/EOS/ESDIS/LANCEMODIS 2002-05-04 ongoing 2862 Granules	 
 No image available	MODIS/Aqua Total Precipitable Water Vapor 5-Min L2 Swath 1km and 5km V5.1 MYD05_L2 v5.1 - NASA/GSFC/SED/ESD/HBSL/BISB/LAADS 2002-05-04 ongoing 1459806 Granules	 
 No image available	MODIS/Terra Granule Level 2 Water Vapor Infrared Jpeg image MOBWIR v6 - NASA/GSFC/SED/ESD/HBSL/BISB/LAADS 2000-02-25 ongoing Collection only	 
 No image available	MODIS/Terra Granule Level 2 Water Vapor Near Infrared Jpeg image MOBWSW v6 - NASA/GSFC/SED/ESD/HBSL/BISB/LAADS 2000-02-25 ongoing Collection only	 

Remove Less Useful Choices

2D Coordinate System ^	
CALIPSO	54
MISR	40
MODIS T	8
MODIS SIN	95
WELD Alaska	5
WELD CONUS Tile	6
WRS-1	2
WRS-2	9

Gather Metrics for Improvement

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Broader Discoverability Improvements

“Humanized” Facets

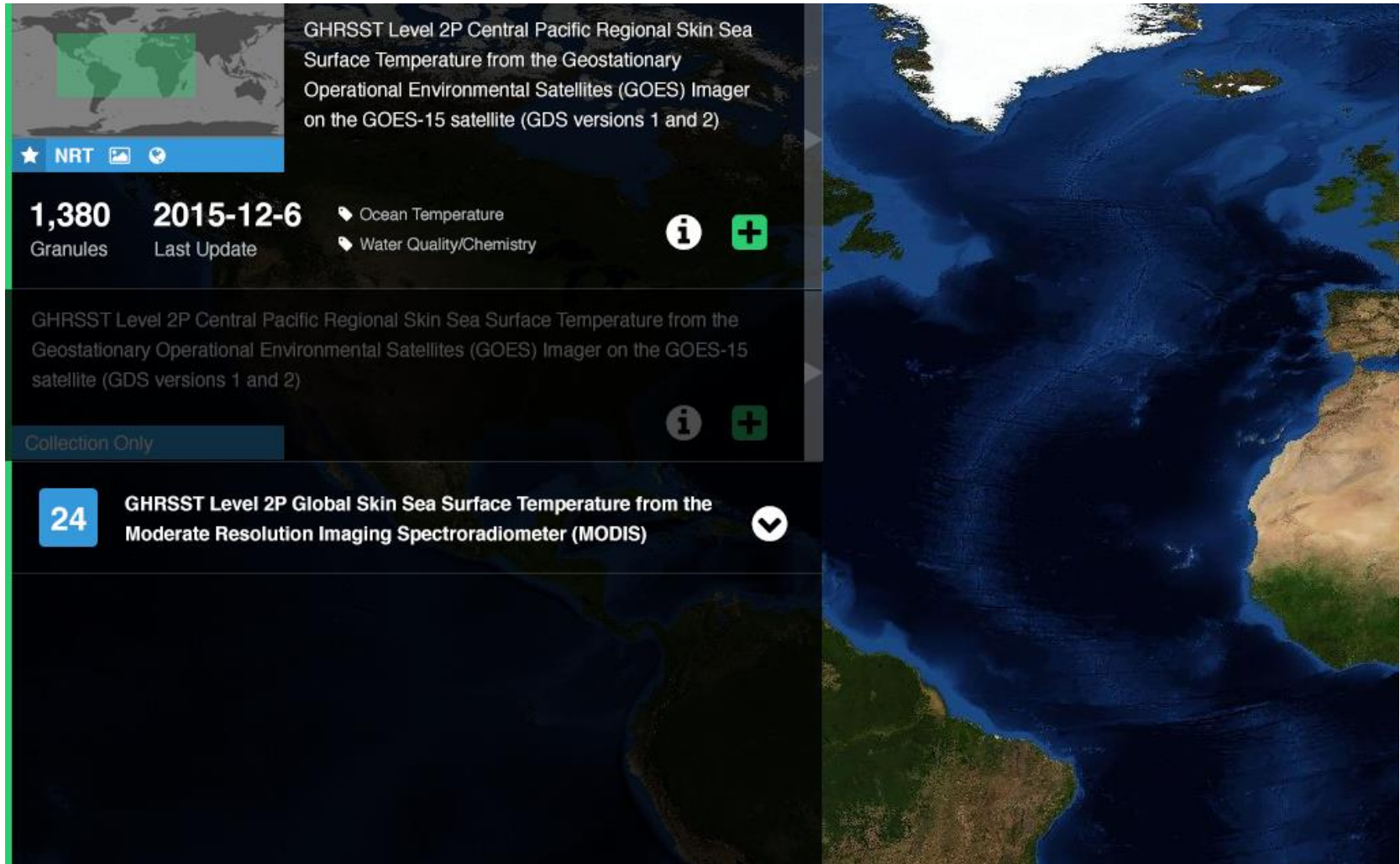
Processing level	
Organization	
ACADIS	558
AR/CDA	192
AU/AADC	2469
Alaska Satellite Facility	155
Atmospheric Science Data Center	523
BCO-DMO	182
CN/NADC	170
COLUMBIA/LDEO	253
COLUMBIA/LDEO/MGDS	417
DHHS/NIH/NLM/NCBI/GB	275



Processing level	
Organization	
ACADIS	558
AR/CDA	192
AU/AADC	2469
Alaska Satellite Facility	155
Atmospheric Science Data Center	523
BCO-DMO	182
CN/NADC	170
COLUMBIA/LDEO	253
COLUMBIA/LDEO/MGDS	417
DHHS/NIH/NLM/NCBI/GB	275

Note to reviewer:
This will be replaced by
a similar image of our
improved facets once
they are implemented

Surface more distinguishing information in collection results



Use Learned Relevancy

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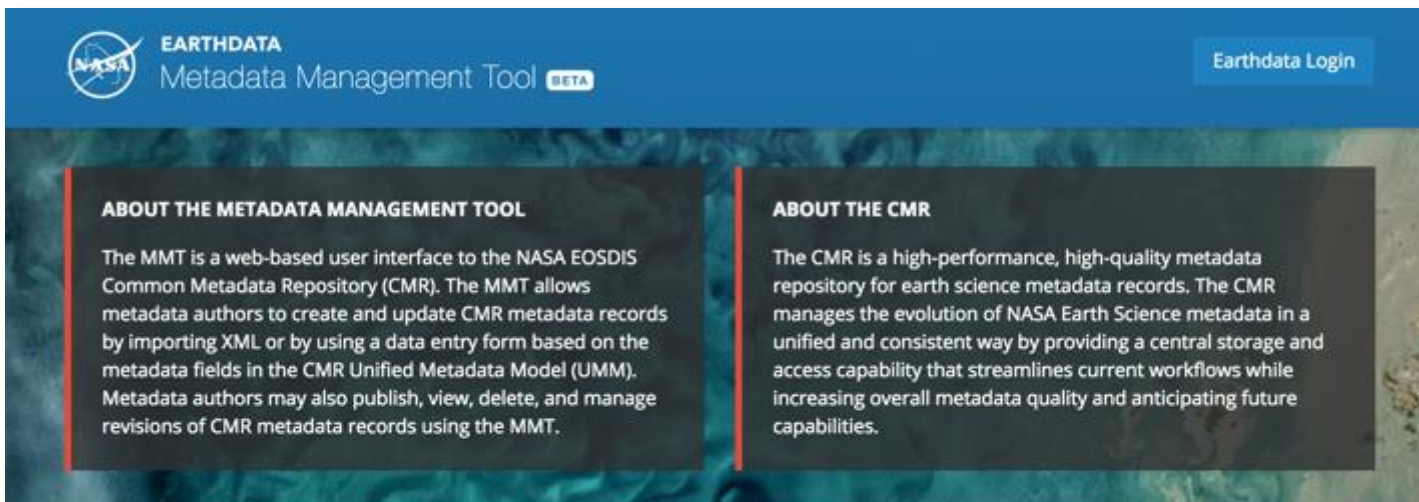
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```

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    "page_size":"20","page_num":"1"}}
```

```
{"event": "access",  
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```

Keep Improving Metadata



ABOUT THE METADATA MANAGEMENT TOOL

The MMT is a web-based user interface to the NASA EOSDIS Common Metadata Repository (CMR). The MMT allows metadata authors to create and update CMR metadata records by importing XML or by using a data entry form based on the metadata fields in the CMR Unified Metadata Model (UMM). Metadata authors may also publish, view, delete, and manage revisions of CMR metadata records using the MMT.

ABOUT THE CMR

The CMR is a high-performance, high-quality metadata repository for earth science metadata records. The CMR manages the evolution of NASA Earth Science metadata in a unified and consistent way by providing a central storage and access capability that streamlines current workflows while increasing overall metadata quality and anticipating future capabilities.

Data Providers

Provider Name	Collections	Granules
ASF	158	7,343,560
AU_AADC	2,471	0
CDDIS	36	39,122,738
ECHO10_OPS	0	0
EDF DEV04	0	0

Did it help?

An ESIP 2017 Talk

QUESTIONS?

Thank You!

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This material is based upon work supported by the National Aeronautics and Space Administration under Contract Number **NNG15HZ39C**.

Raytheon